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ABSTRACT

This document presents findings of a study that examined the impact of teacher teaming on the implementation of a comprehensive program of curriculum and instruction. The program, Complex Instruction (CI), was implemented in four middle schools in the Riverdale School District (Arizona), each of which utilized some form of teaming instruction. CI was designed to involve all students in higher order thinking. Data were collected from interviews with the principal, CI coordinator, and CI teachers at each of the four schools. Findings indicate that: (1) colleagueship was a plus for teachers; (2) in most cases, CI involvement helped to strengthen team identity and unity; (3) block scheduling was an important complement to teaming and to CI; and (4) implementation success depended in part on the fit between CI and other foci of team curricula. The data highlight the importance of voluntary teacher participation and conditions of support for program implementation. School leaders can build support by providing team planning time and developing professional-development norms and expectations for risk taking. Finally, CI influenced and was influenced by organizational structures and processes. One figure is included. (LMI)

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Complex Instruction and Teaming

The Relationship Between School Organization and the Introduction of an Instructional Innovation

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COMPLEX INSTRUCTION AND TEAMING:

THE RELATIONSHIP BETWEEN SCHOOL ORGANIZATION

AND THE INTRODUCTION OF AN INSTRUCTIONAL INNOVATION

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May 1994

INTRODUCTION

This study traces the implementation of a program called Complex Instruction in four middle schools within the same district. Complex Instruction is a comprehensive program of curriculum and instruction which meets many of the criteria set out by middle grades reform. In addition, through its base in sociological theory, Complex Instruction provides a unique approach to reaching the "at risk" student who is not participating successfully in more traditional instruction.

The question of interest here is what helps teachers to implement such an ambitious program. In particular, we focus on the role of the school context, a key part of which is interdisciplinary teaming. In the middle school reform literature, teaming is often seen as an important first step, which sets the stage for other changes in school climate, student connection to school, and flexible, innovative curriculum and instruction. By analyzing and comparing the implementation of Complex Instruction in four middle schools in the same district, all of which have some form of teaming, we can understand better how teaming influences changes in curriculum and instruction, and even how involvement in an improvement effort influences the teams themselves.

- How does teaming help teachers implement a new program?
- How does teaming complicate the implementation of a new program?
- How does involvement in an improvement effort influence teams?

Created by Dr. Elizabeth Cohen and her colleagues at Stanford University over a 20-year history of research and development, Complex Instruction is an approach to curriculum and instruction designed to involve all students in higher-order thinking (Lotan, Swanson, LeTendre, 1992). It provides curriculum units that stimulate student engagement and thinking skills, a management system for more productive small group work, and explicit techniques to ensure that all students have access to the task.

Complex Instruction is gaining increasing attention from middle schools because of its coherence with the middle grades reform agenda. Many schools use Complex Instruction because it addresses the issue of heterogeneity and provides an approach to instruction designed to work in untracked classes. In addition, it emphasizes active, hands-on learning, higher-order thinking, and cooperative learning, all popular instructional reforms at the middle level. It also provides a form of integrated curriculum, in that each unit emphasizes a big idea and develops that idea through a variety of multiple-ability activities that cross subject-matter boundaries. Complex Instruction is not, however, designed for a multi-disciplinary context, in which teachers on a team teach separate but related content webbed from a central theme.

Training in Complex Instruction involves an intensive, two-week summer institute in which teachers learn the theory and components of the program and practice teaching a lesson to middle school students. Follow-up training days occur periodically during the year. In addition, the program requires coaching for teachers during their first year of implementation. Each teacher is to be observed up to nine times during lessons and participate in several one-on-one feedback sessions with a coach, during which both student and teacher behavior are analyzed and the teacher and coach engage in problem solving together.

The site for our study was the Riverdale School District in Arizona. Four of the five middle schools in Riverdale chose to participate in a pilot project with Far West Laboratory for Educational Research and Development. Twenty-two teachers from the four schools were trained in Complex Instruction in June, 1992, and expected to implement during the 1992-93 school year. A special position was created at the district level for a Complex Instruction coach, who provided support to all the teachers.

Middle school reform had begun in the district about nine years ago. The four schools included grades 7 and 8; all had been involved in inservice around the needs of early adolescents, and had established various features commonly associated with middle schools, such as interdisciplinary teaming, advisory periods, untracked classes, exploratory classes, etc. Several years into middle grades reform, the district elected to adopt site-based, shared decision making as its model of school governance, which increased the schools' autonomy in their development as middle schools. Consequently, despite considerable consensus among the principals about middle school philosophy, the four schools varied considerably with respect to both program components and reform momentum.

Before looking more closely at the individual schools, it is important to stop and think about **how** teaming might be related to the implementation of Complex Instruction. Interdisciplinary teaming is one of the hallmarks of middle schools. A group of about 4 teachers share responsibility for the same group of 100-140 students. Common planning time and block scheduling create the structural conditions in which teachers can work as a group to plan the best program for their students. For teachers accustomed to working in isolation, teaming may at first seem unnatural, but as they develop trust and a process for working together, teachers can gain both intellectual stimulation and emotional support from each other.

Perhaps for these reasons, teaming has been a core component of recent middle grades reform. Alexander and McEwin (1989) found that while only six percent of the seventh-grades surveyed in 1968 used an interdisciplinary team organization in basic subjects, 28% of them did so by 1988. In California, an evaluation of the Regional Networks of Partnership Schools (Slater, 1992) found that interdisciplinary teaming was the most frequent programmatic change, with a 100% increase in the amount of teaming over three years. By 1991, about two-thirds of the students in participating middle schools were in teaming structures. Principals and teachers who were surveyed felt that teaming was a key step:

> "The single most frequently implemented middle grade reform recommendation is interdisciplinary teaming. When asked "Why?" principals and teachers with one voice cite the fact that this instructional mode opens the door to the realization of multiple other reform goals and objectives." (Fenwick, 1993)

The idea that teaming is an important first step in the adoption of other kinds of change suggests that schools in which teachers have adopted this practice might represent especially favorable conditions for the implementation of a new instructional technology such as Complex Instruction. This is also consistent with perspectives from sociological theory. When teachers are trying to deal with a complex task, such as implementing a complicated new program, they benefit from being able to talk and coordinate with others. Such coordination can assist with the management of resources such as space, materials, and time and can provide teachers with a sense of support as they take on new roles.

For these reasons, as schools were recruiting teachers for Complex Instruction they were encouraged to send interdisciplinary teams. How this actually played out in decisions about who would participate was complicated and is described in detail below. Should all teachers on a team be encouraged/required to participate? What should be done about a teacher who really wants to be involved but is the only one on a team? The experiences of these four schools illustrate that the reality of trying to match Complex Instruction with interdisciplinary teams is more complicated than the hypothesized benefits might suggest. Factors such as team organization, structure, and professional culture can also influence program implementation. Does the team have a successful history or is it a group of people learning to work together? Does the team have a consistent philosophy about instruction? Is that philosophy consistent with Complex Instruction? These are the kinds of questions that come up as we study the process of implementation across the four schools.

To address these questions, we conducted a series of interviews during the 1992-93 school year in which we sought to understand how implementation was proceeding. We were interested to explore this from the perspectives of the principal, the Complex Instruction (C.I.) teacher who was serving as school C.I. coordinator, and the other C.I. teachers. Our questions were focused on obtaining a picture of each site as a particular context for implementation, a context that might include both supportive and unsupportive factors; we asked about structural conditions (such as teaming arrangements and schedules) as well as cultural factors (such as professional norms and values).

The principal and C.I. coordinator at each of the four schools were interviewed three times: at the beginning of the year, in January, and at the end of the school year. The first and last of these interviews were tape recorded and transcribed. The midyear interview was carried out more informally, without a tape recorder, but with the interviewer taking copious notes; at the end of the day, these notes were immediately typed up into a narrative summary by the interviewer, while the experience was still fresh. Each of the other C.I. teachers was interviewed twice: a brief, informal interview was carried out midway through the year and a more lengthy, formal interview was completed at the end of the year. The year-end interview

was tape recorded and transcribed, while the mid-year interview was recorded in the same manner as described above for the principals and coordinators.

THE SETTING: DESCRIPTION OF THE FOUR SCHOOLS

The decision to adopt Complex Instruction in the middle schools was reached following a meeting to introduce the program to administrators and teachers. Four of the district's five middle schools elected to participate in training and support activities that would enable them to implement the program at their sites. The four schools that elected to implement Complex Instruction were similar in their espoused commitment to middle grades philosophy. This shared commitment was enacted in different ways at the four sites. Additionally, there were differences among the sites with respect to characteristics of their student bodies, school history, and leadership. Each site is described briefly below.

Washington Middle School

Washington Middle School served a population of about 500 students, approximately seven percent of whom were from minority groups. The principal described the school's community as a diverse group, ranging from affluent to middle/low socioeconomically.

The teaching staff at Washington included about twenty-eight individuals (some part-time), eleven of whom were new to the school. The principal, Connie Birch, who was in her fourth year at the school, described her role as having shifted over time in keeping with the site-based shared decision-making governance structure; she emphasized her role in "empowering teachers" and expected them to be active problem solvers and decision makers.

Washington's program reflected many characteristics of middle school philosophy. The school was organized into four "houses," two at the seventh grade and two at the eighth. Teachers in each house shared a common planning period. The instructional program of each house was determined by the teachers, including how to organize the basic core subjects as well as what exploratory electives to offer. In addition, students were assigned to a "prime time" teacher who met with them each day to provide adult attention and interaction outside the regular curriculum. More than any of the other schools, Washington's houses resembled "schools within a school." This was consonant with the principal's belief in allowing teachers to determine their own focus.

The involvement of Washington's staff in Complex Instruction occurred mainly as a result of personal contacts between the principal and the teachers. The principal attended the orientation day with a group of four teachers, none of whom chose to be involved. She then approached staff personally, beginning with the language arts teacher on one of the seventh grade teams. This person, according to the principal, "thought she'd be real excited about it." Together, the principal and this teacher decided to see if more of the teachers in that house might be interested. Two of them did, including the math teacher and the team leader, a special education teacher. A fourth team member had medical problems that made

participation impossible. A fifth person was being hired for this team, and a condition of employment was that the person would enroll in the summer training. Thus, four of the five team members were trained together. In addition, a fifth Washington staff member, a humanities teacher from one of the eighth grade teams, elected to participate in the program.

Lincoln Middle School

Lincoln Middle School was the newest middle school in the district, having opened in September of 1991. Its 590 students came from mainly middle to upper middle class homes and were 96% English-speaking caucasians. About six students were enrolled in the ESL program. Of the four schools participating in the Complex Instruction program, Lincoln had the least diverse student population; families of Lincoln's students were noted for setting very high academic expectations for their children.

Lincoln's teaching staff of 37 had been selected through a process of open application. Prior to the opening of the school, an open meeting had been held for teachers to learn about the new school and the expectations of the principal with respect to middle grades instruction. The principal chose his team leaders first and involved them in the selection of other teachers. He acknowledged that this process resulted in the criticism that he was "taking all the best teachers." Teachers at Lincoln were expected to be actively involved in curriculum writing and were encouraged to try new things; risk taking was valued by the principal, and teachers were not penalized for unsuccessful efforts. As a result, teachers at the school felt a great deal of pressure to perform.

Lincoln's principal, James Forsyth, had been in the district for about 14 years, five of them at the district office in charge of secondary operations. His focus in opening Lincoln Middle School was to create a "completely teamed school" with interdisciplinary teaming and interdisciplinary teaching. Training in cooperative learning was required of all staff members.

Like the other middle schools, Lincoln's students and staff were organized into six teams, three at each grade level. Teachers on each team shared a common planning period. By combining some classes for electives and having two teachers share the responsibility, each teacher was also able to have another two or three periods a week for preparation activities.

The five Lincoln teachers who participated in Complex Instruction training came from four different teams. According to the principal, when the announcement about the program was made, more teachers were interested than could be accommodated. The principal chose to spread participation across grades, teams, and academic disciplines by selecting one science teacher, one math, one social studies, one language arts and one humanities. In this way, besides the individual teacher implementation in their classrooms, these five staff members would "take the skills they are learning, and the concepts, to their team as part of the team planning process for interdisciplinary units." Each seventh grade team had one teacher involved; one eighth grade team sent two teachers.

Madison Middle School

Madison Middle School served a student population of about 520 students, about 16% of whom belonged to minority groups. The principal described the socioeconomic distribution of this group as "bimodal" with a number of low income families and non-English speakers as well as "twenty some percent gifted and some of the wealthiest families [in the district]." The principal reported that the school had always done very well with the "high" and "average" students, but had not been as successful with the "low" group.

Madison's principal, Jason Logan, who was in his sixth year at the school, described himself as a "died in the wool" middle school person. Madison's staff of about 27 teachers was similar to Lincoln's in that these were, according to the principal, "all volunteer teachers," that is, all who had elected to work at the school. There were nine new teachers on the staff this year, which was the first year in which the principal had had to hire teachers (as compared to acquiring them by transfer). The principal considered it a benefit to the school that its staff of teachers all wanted to work with this age group.

Like other schools in the district, school governance at Madison was managed with a site-based shared decision making model; this model was an especially well articulated one. Eighteen different committees had the authority for decision making in various areas, with the principal serving as a committee coordinator and information resource. Unlike other schools, Madison's teachers had received many hours of formal training and preparation for the roles that they took in school governance. The expectation for ongoing professional development around specific focus areas was part of the professional culture at the school; Logan described Madison as a school that was "serious" about staff development. All teachers were expected to attend training in cooperative learning to begin with; selected topic areas followed, with a new effort added each year, according to the decision of the staff.

The school was organized into two seventh-grade teams and two eighth-grade teams, each with the responsibility for about 130 students. One team at each grade level was assigned all of the ESL students; the LRC (special education) students were assigned to the other. The teams were described by the principal as "academic interdisciplinary teams" with heterogenous grouping. Teams had two planning periods a day together. This was the first year in which academic levels of courses had been disbanded, although grouping was retained in math classes.

Madison had the largest contingent of teachers participating in the Complex Instruction program. Because the principal considered C.I. to be a "godsend" with respect to the decision to untrack, he asked that the school pilot the program with all teachers. The district turned down this request, and said that five teachers could be trained. Logan convinced district officials to allow eight teachers from the school to participate. Five attended the orientation, and all of them wished to participate; these teachers generated interest among colleagues, and three more were added to the group. One of the eight transferred out of the district, leaving seven to implement. These seven represented three of the four teams in the school. Because

of some changes in teacher placement, one seventh grade team had three of its four teachers trained; each eighth grade team had two teachers trained.

Jefferson Middle School

Jefferson Middle School served a population of about 600 students. Approximately 17 percent were identified as minority. The principal described the student group as being generally lower socioeconomically compared with the other middle schools: "we have a lot of student that are on free and reduced lunches." He also mentioned higher rates of transiency and many students "at risk in terms of ability to read and write and arithmetic." This was the only one of the four middle school with a Chapter 1 program; about 120 students were enrolled.

While the school participated in site-based shared decision making, the principal described the staff as "struggling with it." Teachers had been instrumental in the decisions about this year's schedule; in an effort to reduce class size somewhat, the staff elected to eliminate the double planning arrangement whereby each teacher had both an individual planning hour and a common planning hour with other team members. Instead each teacher had just one individual planning time. This arrangement also reduced the need for teachers to teach in more than one subject area. Team planning was assigned to a school-wide time on Wednesday mornings, but some teachers failed to show up for this.

Jefferson's principal, Carson Dillon, had been at the school for 13 years. His retirement at the middle of the year resulted in the selection of the assistant principal to take over leadership of the school. The retiring principal saw the school's student population as the most challenging in the district. Moreover, he viewed the district as unsupportive of the school. It was common for Jefferson to be most affected by district staffing changes, with new teachers often being the victims of staffing reductions, and excess senior high school teachers often being assigned to the school. Staff complaints were common and there was a tendency for teachers to make decisions as a group that many individuals would then be unwilling to support.

The teaching staff at Jefferson included about 25 teachers organized into four teaching teams, two at each grade level. In addition, the staff included four learning resource teachers and a full-time school psychologist. The involvement of Jefferson's staff in Complex Instruction was strongly influenced by the district coordinator, Norma Herrick, who had been a teacher at Jefferson prior to taking her district position. She knew many of the staff and was able to influence their decisions. She and the principal worked to arrange for an entire team of teachers to participate in the program. As the result, the principal reported, "Some of them [the Complex Instruction teachers], I might add, are doing it [participating in the program] but not with the idea that it's coming from them but it's from the top down, so that's why they're resistant to it." The school's C.I. coordinator, Jennifer Vance, was the Chapter 1 teacher; the four other C.I. teachers were members of an eighth grade team.

COMPLEX INSTRUCTION IMPLEMENTATION AND TEAMING

Given the organization of the four schools into teams and the differing selection processes that were used, Complex Instruction teachers found themselves in one of three conditions for implementation: a) they were isolated, the only person on their team involved in C.I.; b) they were situated on a team in which there was one other person involved in C.I.; or c) they were on a team in which the whole team was involved in C.I.. Figure 1 summarizes the distribution of teachers into these implementation conditions by schools. Depending on the school and the team, each of these three situations carried with it factors that supported or impeded teachers' implementation as well as their perceptions and feelings about being involved in this new instructional technology. Conversely, the involvement of teachers in the C.I. project influenced the teams themselves and shaped the forward planning of individual teachers and of schools with respect to next year's teaming arrangements and C.I. implementation. In this section, each of the three implementation conditions is examined as it was experienced and reported by the teachers at the four schools.

Insert Figure 1 about here

A. Isolated C.I. Teachers

Of the total group of 22 teachers, five found themselves in situations where they were the only person on their team involved in C.I.. Three of these teachers taught at Lincoln (where participation had deliberately been dispersed among teams), one at Jefferson, and one at Washington. Their experiences are described below.

Lincoln Middle School

As a result of the principal's decision to spread Complex Instruction participation across teams, and because Lincoln sent only five teachers to the training, three of those five were on teams where they were the only C.I. teacher on their teams. One of these three did not implement any Complex Instruction units; the other two both implemented, but had different experiences in doing so. Each experience was illustrative of helpful/hindering conditions to C.I. implementation.

Stacy Joyner: Stacy was a humanities teacher and the C.I. coordinator for the school. From the very beginning of the project, she described her situation as an isolated one, which she did not like. She would have preferred the "rapport" that she envisioned as part of shared implementation. Additionally, even though she knew that having longer blocks of time would have helped her with implementation, she did not want to be "the only one" on her team asking for block time. These conditions were further exacerbated by her general isolation

School	Teacher	Result
Isolates		
Washington	Natalie Burke	Implemented, Left school next year
Lincoln	Stacy Joyner	Implemented, Missed colleagueship
	Grace Anglin	Did not implement
	Laura Guthrie	Implemented, Had non-CI partner
Jefferson	Jennifer Vance	Implemented, Formed CI team next year
Pairs from a Team		
Madison	Sharon Hicks and Janice Lamkin	Implemented Implemented
	Joe Kirby and Doris Mosher (no common prep)	Implemented, Moved to CI team next year Implemented, Discontinued next year
Lincoln	Joan Spalding and Dotty Campbell	Implemented Implemented
Whole Team		
Madison	Jeffrey Fox, Betty Gresham, Darlene Holman	All Implemented (Experimented with CI)
Washington	Tom Sargent, Alice Morrow, Jackie Santiago, Suzanne Taylor	All Implemented (CI gave team identity)
Jefferson	Stewart Kramer Leonard Parsons, Jody Wheeler, Milton Kittredge (No common prep)	Implemented Did not implement Implemented, felt unsupported Did not implement

Figure 1. Complex Instruction implementation conditions and results.

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from other C.I. teachers in the school. She did not share the same lunch hour as the other C.I. teachers, hence had little opportunity for face-to-face contact with them. For Stacy, being alone on her team was difficult.

Laura Guthrie: Laura was a science teacher who was also alone on her team. However, within her four-person group, she and a colleague had formed a partnership based on a shared philosophy (which she distinguished from the more "traditional" thinking of her other two teammates). The supportiveness of her colleague was helpful to Laura. In one instance, this person was able to connect her own classroom instruction to the C.I. unit that Laura was implementing. Together, the two of them discussed ways in which they could work with more of a block schedule in the year ahead. Thus, even though no one else on her team was directly involved in C.I., Laura did not feel isolated in her implementation.

Grace Anglin: Grace was a member of a three-person team that was "totally integrated" in their approach to instruction. She taught in several subject areas (social studies, math, language arts), and she and her colleagues organized their instruction around a series of themes. According to Grace, "C.I. content does not fit any of these themes." As a result of this lack of "fit," she chose not to implement C.I. She concluded from this experience that her school should have sent a whole team to the training.

By May, when asked what recommendations he would make to a school leader whose school was going into Complex Instruction, the principal had rethought the notion of spreading things out and said, "If you're a team school, it would be important for more members of the team, at least two people from the team [to go] so that they have that support."

Washington Middle School

At Washington, four of the five C.I. teachers were on a single team, leaving the fifth person in an isolated situation. This isolated teacher did implement, but not without problems, as described below.

Natalie Burke: Natalie was the only teacher on the "integrated" team at Washington. This four-person team had elected to replace the traditional discipline-oriented curriculum, organized by traditional subject areas, entirely with integrated thematic units. Despite the fact that the C.I. units did not exactly fit the integrated curriculum, Natalie chose to implement both math and core (English, social studies) units. Her implementation was constrained by having to fit within the time schedule of the integrated units (that is, she had to fit the C.I. unit within the beginning and end points of the integrated unit). She stated that her team "sort of had to accommodate me," but made it clear that she could not get any longer daily blocks of time for implementation. Interestingly, her teaching of C.I. roles and norms was something that other teachers in her team capitalized on in their cooperative work with students. At the end of this school year, Natalie left Washington.

Jefferson Middle School

The situation at Jefferson was similar to Washington, in that four teachers were on a single team, and one teacher was isolated. In this case, however, the isolated person was a teacher leader who was enthusiastic about C.I. and served as the C.I. coordinator for her school.

Jennifer Vance: Jennifer represented a special case for implementation. She was the Chapter 1 reading program director at her school. This meant that she was working with a special population of students, all reading below grade level, and that she worked with them in smaller groups than regular teachers. The first circumstance made implementation difficult for her, while the second helped. Despite the special circumstances in which she implemented, Jennifer saw C.I. as a valuable instructional tool, which she could use to create a different kind of team situation in the following year. She and a colleague came up with a proposal to create a cross-grade team that would include a large number of Chapter 1 students, but would also draw from the general student population. She and her teammates would take total instructional responsibility for the group and would provide instruction across the subject areas; they would rely heavily on C.I. to accomplish this.

B. Teachers on Teams with a C.I. Colleague

Six of the twenty-two teachers found themselves in situations where another person on their team was also trained in C.I.. One of these pairs was at Lincoln School and two were at Madison.

Lincoln Middle School

Joan Spalding and Dotty Campbell: One of the eighth grade teams at Lincoln had its team leader, Joan Spalding, the humanities instructor, and the social studies teacher, Dotty Campbell, both trained. This circumstance created a very beneficial situation for their implementation. Dotty and Joan shared a common sense of direction and goals for the team, which also included one of the district's Integrated Thematic Instruction (ITI) trainers. They felt that they were able to blend the Integrated Thematic Instruction and C.I. approaches satisfactorily, and implemented in both areas; the team did four integrated units during the year, and Spalding and Campbell did C.I. at other times. They were accustomed to working closely together and used their preparation period to talk, plan, and coordinate the C.I. work. Dotty's classroom was a double room, especially well suited for C.I. implementation; the two teachers traded classrooms when Joan was doing C.I. to give her access to the better space. Their team was cooperative with respect to blocking the schedule for C.I., which further supported their implementation. Thus, despite some of the differences in approach represented on this team, the teachers were able to negotiate and accommodate each other. In keeping with their successful partnering in C.I. implementation, Joan and Dotty decided to work together to become C.I. trainers for their school and district.

Madison Middle School

Joe Kirby and Doris Mosher: Joe and Doris taught social studies and language arts respectively on a newly formed eighth grade team. Doris was a part-time teacher who worked mornings. As a result of this schedule, Joe and Doris did not get to talk to each other very often. While Doris knew, for example, when Joe was doing C.I., there was "no time to sit down and talk." Although their team did some block scheduling for other activities, C.I. was implemented by both teachers using the regular 45-minute class periods, which they found problematic. Both teachers reported that they would have benefitted from more opportunities to talk to other teachers who were implementing. Thus, the potential benefits of having two persons trained on a team were undermined by the part-time status of one of them. At the end of the year, Joe reported that he was looking forward to his situation the following year, when he would be the team leader of a 7th grade team in which every teacher except one would be trained in C.I.; he also volunteered to become a C.I. trainer for the district and school.

Janice Lamkin and Sharon Hicks: Sharon was team leader and humanities teacher, and Janice was social studies teacher on the other eighth grade team at Madison. For Janice, especially, this configuration was helpful; she felt "fortunate" to be on a team with Sharon, whose implementation was typically ahead of her own. The two were able to discuss C.I. during their shared preparation hour, which also gave them the opportunity to introduce their other two teammates to C.I.. To achieve longer blocks of time for implementation, Sharon and Janice sometimes "flip-flopped" their classes, according to Janice. Sharon saw C.I. as a vehicle for rethinking the schedule, and she reported that she wanted to look at 90-minute blocks for the following year. Their implementation was also supported by the physical space in which they worked. Their classrooms were in what was the old school library, which meant that they were larger rooms with storage areas. Sharon reported that she enjoyed having C.I. colleagues at the school and talking with them informally; she was critical, however, of some of the formal C.I. meetings (at the school and district levels), the purposes of which were unclear to her.

C. Teachers Trained in Teams

With the exception of Lincoln, each of the schools had one team in which all (or almost all) of the teachers were trained in Complex Instruction. As illustrated below, however, this did not always create better conditions for implementation.

Madison Middle School

The teachers trained at Madison included a group that comprised a team, all of whom implemented. Three of the team members were trained together in June, and the fourth member received training during the school year. They had a team preparation period, in addition to individual planning time and used their time to talk about C.I. along with other team issues. They reported that they "talked about C.I. so much as a team" and "use[d] a lot

of the language." Their team became a kind of laboratory for testing out issues in implementation. They learned, for example, that skillbuilders did not necessarily transfer: if one teacher taught a cooperative norm, the students did not automatically apply it to groupwork in another team member's class. But, when several teachers repeated them, and when students had lots of practice because they are doing many units over the course of the year, then students really developed good cooperative skills. "Ultimately, our students were better organized for group work." They also experimented with teaching a unit in a multidisciplinary fashion, where everyone taught a different part of the unit, and learned that this was not effective. In sum, this team functioned well as a team, even though they were in their first year, perhaps because of the intensive work at this school on site-based management, and training in working in committees and running meetings efficiently. They were able to use their joint C.I. training as a springboard for joint experimentation.

Washington Middle School

An entire seventh-grade team at this school was trained with the exception of one person, the humanities teacher, who needed to participate in another district training which conflicted with C.I.. The team leader was the Resource teacher, who assisted in the classrooms of the other teachers as they implemented C.I.. Again, all the teachers who were trained also implemented. For this team, it was a year of team building. They were a new team, without any particular shared focus or vision. According to the principal and the teachers, C.I. became a kind of special characteristic for this team, something that gave them a distinct identity in the school (where all teams were encouraged to be unique). They expected all teachers who might join the team in the future to be trained in C.I.. In fact, Sargent had been hired only the previous year, and with the condition that he attend the training. In the meantime, the one teacher who had not been trained became a kind of isolate. In January, the team leader noted that she was "kind of separating off," which could be noted even in her body language. This team had less opportunity to talk than the one at Madison (they only had one hour of common planning time a week, but occasional release days) and seemed to be working to develop their team relationship. In regard to one question about deliberately planning interdisciplinary curriculum around C.I., the team leader commented that "they weren't strong enough yet as a team to do that." But they did block their schedule for C.I. and maintained a joint commitment to the program.

Jefferson Middle School

The four teachers on this team, just as with the other two, were teammates this year for the first time. But this team never formed a working group. Two of the teachers implemented C.I., but two did not. The two who did not implement complained that they had been forced to attend the training, that it was a top-down decision. One said that attending the training was a condition for joining the team, and that he wanted to be on that team so he finally agreed to attend the training. But this sense of pressure created resentment rather than commitment. Both also had problems with curriculum fit. One taught physical science and felt that he could not use the C.I. life science units. (The general systems unit he "did not

like.") The other taught math and felt that the units were too difficult and unstructured for someone like himself, who was teaching out of his preferred subject area, social studies. Of the two teachers who did implement, one worked very individually (which was the norm for him), and the other proceeded with a great deal of resentment that she was not receiving support from her team. The team supposedly had a joint planning time every Wednesday morning before school, but attendance was not mandatory. Teaming itself was not a concept that these four people had bought into. One teacher commented that the team concept creates problems for him, that he sees a value in being "left alone" while trying a new thing. In sum, these four people were not really a team.

DISCUSSION AND CONCLUSION

As we began our work with the Riverdale District to introduce Complex Instruction in four middle schools, we expected that teacher teaming would be a favorable condition for C.I. implementation. Looking back on the experience, we understand better the complex array of factors that influences whether, in fact, teaming does make a positive contribution to teachers' implementation. We see, for example, that the team from Jefferson included two non-implementers and that the two team members who did implement did so without each other's support. At Washington and Madison, in comparison, Complex Instruction seems to have helped teams develop more cohesion. A look across schools at isolated C.I. teachers, which we expected to be an unfavorable condition for implementation, shows only one instance of a teacher not implementing. What do these experiences and outcomes suggest? As we examined the stories of individuals, teams, and schools, four themes emerged. These are described in turn:

- *Colleagueship is a plus.*

Teachers generally commented that they found value in having someone else to talk to, someone with whom to share the trials and tribulations of working through the "implementation dip," someone to share the work of gathering materials. Isolates who did not have this support were outspoken about missing it, talked about wanting it, and sometimes found ways to build it in the following year (see Vance and Kirby).

This colleagueship did not necessarily depend on a teacher's being in a formal C.I. pair or team; conversely, being in a C.I. pair or team did not always provide such colleagueship. Guthrie, for example, though a technical isolate, had a partner with whom she worked closely, and this seemed to provide the needed support. On the other hand, Kirby and Mosher, who were on the same team, did not benefit from this, because Mosher worked part time and they did not have planning time together; they both were more like isolates. The team at Jefferson was not really a team at all, and at least one teacher felt really unsupported.

Thus, while colleagueship is a plus, it is not a simple matter of putting teachers in groups. Pre-existing social groupings must be considered. Structures that support professional

dialogue, such as shared planning time, as well as the general professional culture of the school, must also be considered. When these conditions are present, however, shared involvement in the implementation of a challenging innovation such as Complex Instruction can actually support team development, as discussed next.

- *Complex Instruction can serve as team "glue."*

Taking on an innovation like Complex Instruction together with one's team mates can help bring a team together and give the team a joint framework for curriculum and instruction as well as an approach to equity and access. In both Washington and Madison, the teams gained identity or focus through this effort. Madison even engaged in joint experimentation and began to see the benefits for students from substantial and consistent exposure to C.I..

As suggested above, this benefit seems to depend on prior levels of commitment and support for teaming. Although the teams at all three schools were new this year, both the structural conditions and the school and individual support for teaming were lacking at Jefferson. And Complex Instruction, perceived as forced on the team, did not help.

- *Block scheduling is an important complement to teaming and to C.I..*

One of the consistent experiences was that teachers found they wanted a block schedule, with 90 minutes of instruction, in which to carry out Complex Instruction. In order to get this time, teachers all had to negotiate with their team mates to arrange such a schedule. Some teachers could succeed at such negotiations. Even if other team mates had not been trained in C.I., they might be willing to block the schedule. Sometimes just two teachers could "flip-flop." Other teachers could not work out the block schedule, or even hesitated to ask because they felt that it would be an imposition on the team.

As teachers talked about their plans for next year, many of them commented that they expected to do more block scheduling. Some had worked out a definite schedule; others saw more receptivity to flexible arrangements. This may have been one of the greatest long-term impacts on the teams – they saw a need for longer blocks of time and worked to create them.

- *The fit between C.I. and any other team curriculum foci cannot be ignored.*

In addition to issues about teams as effective working groups, as discussed above, it is important to look at the philosophy or curricular focus of the team or team members. Two of the isolates found themselves on teams that were integrated, thematic to such a degree that the C.I. could not be accommodated well. One teacher chose not to implement C.I. because it did not fit; the other implemented, but with constraints, and ended up leaving the school.

But this does not mean that an exclusive C.I. focus is required. At Lincoln, two teachers were successful implementing as a pair in a team with a strong Integrated Thematic Instruction (ITI) trainer. They appeared to negotiate a team approach that would use both.

So the willingness of the team members to accept differences and work out compromises is also a factor.

In addition, it is useful to look at other demands on the team. At Madison, the teachers saw Complex Instruction as the new thing this year (at least for curriculum and instruction). At Washington, in contrast, one member was sent to a different training. Also, the team was working on a special education project, which caused them to get a later start in implementing. It's "easier for teachers if they are only doing one new thing at a time."

Conclusion

As middle schools strive to implement reforms that will provide more effective learning environments for adolescents, school leaders are faced with numerous difficult decisions concerning how best to inspire and support the adoption of new practices. This study of Complex Instruction implementation suggests several recommendations for leaders whose schools decide to adopt this program.

First of all, we saw the importance of teacher selection. The experiences of the Riverdale schools indicate that teachers should not feel forced or coerced into participating. Similarly, teachers in situations that represent competing demands or visions (such as integrated instruction) may face overwhelming challenges with implementation. While it is not necessary to send entire teams to be trained together, teachers benefit from having partners to work with during their implementation.

In addition, there are specific ways in which school leaders can build conditions of support for C.I. implementation. Team planning time makes it possible for teachers to coordinate and collaborate in their implementation. Similarly, the general professional culture of the school, including professional development norms and expectations for risk taking, can also influence implementation.

Finally, any leader whose school is involved in Complex Instruction should expect to see interactions between this program and other structures and patterns of teacher organization and interaction. For example, the dynamics among a team can change, and team collaboration can be strengthened by this experience. Teacher participants may develop new expectations and readiness for structures such as block scheduling. They may set expectations for non-C.I. team members or try to create new teams with more of a C.I. focus.

By being aware of how an innovation such as C.I. is both influenced by and influences structures such as teaming, school leaders can better position their schools to benefit from this program.

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